

### ABSTRACT OF THE DISCLOSURE

An information recording apparatus for recording multi-leveled information in a phase-change recording medium by the application of a laser beam thereto by modifying a power level of the laser beam into two or more power levels so as to correspond to the multi-leveled information to be recorded, and setting a plurality of recording mark units including therein at least one recording mark to be formed, based on the modified power levels, so as to correspond to the multi-leveled information, an information reproducing apparatus for reproducing multi-leveled information recorded in the phase-change recording medium with the application of a laser beam thereto, and an information recording and reproducing apparatus, and an information recording method, an information reproducing method, and a phase-change recording medium for use in the above apparatus are disclosed.